

REMARKS/ARGUMENT

Applicants respond herein to the Final Office Action dated August 3, 2006.

Claims 1, 3-10, 13-17, 19, 21-28, 31-35, and 37 were rejected under 35 U.S.C. §102(b) as being anticipated by Boku et al., JP 09-121035. Reconsideration of the rejection is respectfully requested.

Independent claim 1 has been amended to provide, in part, for, “[a] method for manufacturing a semiconductor device,...wherein when said metal oxide film is completely formed, said semiconductor substrate is annealed.” Independent claim 19 has been amended to provide, in part, for, “[a] method for manufacturing a semiconductor device having a capacitor, comprising: ...annealing said semiconductor substrate when said capacitive insulating film is completely formed...” Independent claim 37 has been amended to provide, in part, for, “[a] method for manufacturing a semiconductor device, comprising the steps of: ...annealing said semiconductor substrate when said oxide film of said metal is completely formed.” Antecedent basis for the amendments to independent claims 1, 19, and 37 is found in the specification, for example, on page 18, lines 19-22.

In contrast, Boku et al. provides for “A method for manufacturing capacitor for semiconductor device” which “includes a first step in which a Ta₂O₅ film is formed on a semiconductor substrate 30 on which a storage electrode 40 is formed, a second step in which UV-O₃ annealing is performed on the substrate 30 carrying the Ta₂O₅ film, and a third step in which the first and second steps are repeated one or more times”, (Abstract, emphasis supplied). The annealing of a substrate on which Ta₂O₅ film is formed after formation of the Ta₂O₅ film and then the formation of more Ta₂O₅ film and annealing of the substrate at least one or more times as taught in Boku et al. directly teaches away from the requirement of independent claims 1, 19, and 37 that the metal oxide film or the capacitive insulating film be completely formed when the semiconductor substrate is annealed.

Claims 11, 12, 29, and 30 were rejected under 35 U.S.C. §103(a) as being unpatentable over Boku et al. in view of Kukli et al., “Atomic Layer Deposition and Chemical Vapor Deposition of Tantalum Oxide by Successive and Simultaneous Pulsing of Tantalum Ethoxide and

Tantalum Chloride”, Chemical Materials, vol. 12, published in 2000, pp. 1914-1920.

Reconsideration of the rejection is respectfully requested.

Since each of claims 11, 12, 29, and 30 are indirectly dependent upon one of independent claims 1 and 19, each of claims 11, 12, 29, and 30 are allowable over Boku et al. for the same reasons recited above with respect to the allowability of independent claims 1 and 19 over Boku et al.

With regard to Kukli et al., that reference does not teach, disclose, or suggest the annealing of the semiconductor substrate when the metal oxide film or the capacitive insulating film is completely formed, as required by independent claims 1, and 19, and thus, in dependent claims 11, 12, 29, and 30. On the contrary, Kukli et al. teaches away from such annealing, as Kukli et al. states in the last sentence of the Experimental Section thereof on page 1916 that, “The films were not heat-treated after the deposition and all the results described below thus characterize the properties of the films in their as-deposited state,” (emphasis applied).

Claims 2, 18, 20, and 36 were objected to as being dependent upon a rejected base claim, but were stated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In view of the foregoing amendments and remarks, allowance of claims 1-37 is respectfully requested.

Accordingly, the Examiner is respectfully requested to reconsider the application, allow the claims as amended and pass this case to issue.

THIS CORRESPONDENCE IS BEING
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Respectfully submitted,


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